

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 4, 2010

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending June 4, 2010

Maintenance/Conduct of Operations/Work Control. Two weeks ago, a YSO engineer observed maintenance workers repairing a high-pressure helium system in a bunker adjacent to Building 9204-2E. The YSO engineer identified that the work package was not in the area and that workers had not used a lockout/tagout device to isolate the high-pressure system. The supervisor arrived shortly thereafter with the work package, which contained several errors but did require a lock/tagout to be applied on the helium compressor prior to making repairs. B&W externally reported this event.

This is the third event in the past two months during which YSO identified maintenance personnel violating the requirements of work control documents (see the 5/14/10, 4/23/10, and 4/16/10 site rep. reports). B&W has issued a Standing Order that requires maintenance personnel to keep work packages readily available at the job site. In addition, B&W is planning to execute the following corrective actions to address the deficiencies in conduct of operations and work control that were apparent during these recent events:

- B&W management will conduct a ‘work pause’ to re-emphasize its expectations regarding proper conduct of operations to maintenance personnel,
- B&W will implement enhanced floor surveillance of maintenance activities, and
- B&W has initiated quality reviews of maintenance work packages.

Highly Enriched Uranium Materials Facility (HEUMF). In mid-May, B&W identified non-conformance of safety-significant secondary confinement system (SCS) electrical wiring wherein the wiring is routed through a junction box that also houses non-safety wiring. While B&W performed an extent-of-condition review for the SCS (finding several instances of mixed wiring), B&W did not plan at that time to perform extent-of-condition reviews for other HEUMF safety systems. This week, YSO personnel stated that B&W now plans to perform extent-of-condition reviews of the wiring issue for other safety-significant systems.

The HEUMF safety basis allows polyethylene bottles (containing uranium) to be stored in crimp-sealed cans (primary containers), which in turn are stored in drums or Rackable Can Storage Boxes (secondary containers). While in storage, hydrogen will be generated through radiolysis of the polyethylene bottle. The site reps. recently requested YSO and B&W provide the documented evaluation of this potential hazard. In response, B&W developed a technical basis document, which includes calculations that indicate hydrogen could be generated in the cans to equilibrium levels that exceed the lower flammability limit, assuming the can is leak tight and does not diffuse hydrogen. Following discussion with the site reps., YSO and B&W personnel indicated the technical basis document will be revised to provide additional analysis and to characterize any potential hazards in storing or handling of these cans.

Performance Metrics. Earlier this year, at the urging of YSO, B&W issued a procedure to guide the development and use of performance metrics at Y-12. B&W’s goal for the effort is to assist management in monitoring and analyzing performance (safety, production, financial, etc.) so informed decisions on improving performance can be made. B&W’s procedure includes guidance that metrics should have goals or targets and that metrics should include both leading and lagging indicators. Although B&W has developed more than 400 metrics, this effort is still

in the development stages in that some of these metrics lack a stated goal and are still being evaluated for efficacy.